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Highlights of Final Results of the eMINTS-4-Utah Program

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This report provides a comparison of baseline to final results for UPASS CRT tests administered in eMINTS-4-Utah schools in April 2004 and April 2005. The results show that on most tests students enrolled in eMINTS classrooms scored higher than students enrolled in non-eMINTS classrooms in eMINTS schools. Additionally, many students with socio-economic or academic characteristics that place them at risk for underachievement scored, on average, higher in eMINTS classrooms than non-eMINTS classrooms in eMINTS schools. Observation data collected in the winter of 2005 will be discussed and compared to 2004 observations in the comprehensive final report.

The focus of the eMINTS final report is to understand how like and different students in schools with eMINTS classrooms perform on the UPASS CRT tests as well as how students within eMINTS schools and non-eMINTS schools vary in their performance on these state tests. Additionally, the performance of students in eMINTS classrooms in the 04 and 05 school years is compared to better understand how students and teachers become more adept and productive in the eMINTS environment over time. These highlights focus on occurrences of positive change in eMINTS classrooms between 04 and 05 as well as between 05 eMINTS and non-eMINTS classrooms and eMINTS and non-eMINTS schools. Highlights are organized by test subject, grade, and special categories. Detailed analysis, tables, and graphics will be included in the Final Results of the eMINTS-4-Utah Program report as well as the discussion of eMINTS classroom observation data.

Language Arts

Utah students in grades 1 through 11 complete the UPASS CRT language arts test each year. This report considers students in grades 4 through 8. Student outcomes are further disaggregated by achievement and socio-economic characteristics including: ethnicity, limited English status, low income, disability, and special education status. Table 1 illustrates the direction of change by grade for students in eMINTS classrooms in years 04 and 05. Table 2 compares students in eMINTS classrooms and non-eMINTS classrooms in schools where the eMINTS program has been implemented. Table 3 characterizes 05 student outcomes by achievement and socio-economic status that appear to benefit from participation in eMINTS classrooms.

While student characteristics vary from year to year making analysis over time difficult, most eMINTS teachers continue to teach in an eMINTS classroom. Comparing annual outcomes for these classrooms provides an indication of the degree of implementation of the eMINTS model. Final analysis will include a comparison of mean scaled scores by lesson typology and years in program.

On average, elementary students in 05 eMINTS classrooms scored higher or near equivalency of students in 04 eMINTS classrooms on the Language Arts UPASS CRT test. In grades 4 and 6, scores remained relatively flat, varying in range by less than two points on the scaled score mean. Fifth grade students in 05, however, scored more than three points higher on average than their 04 peers. The average scaled score of 05 7th grade middle school students remained relatively consistent with 04 scores. The 8th grade cohort in 05 scored lower than the 04 cohort.

Table 1. Language Arts UPASS Scaled Score Results for eMINTS Classrooms 04-05

	N	04 Mean	N	05 Mean	Change	Trend
Grade 4	308	160.47	274	159.36	-1.11	—
Grade 5	61	159.74	36	163.19	3.45	—
Grade 6	274	165.80	344	164.26	-1.54	—
Grade 7	394	159.10	301	157.70	-1.40	—
Grade 8	300	161.42	418	158.27	-3.15	—

On average in eMINTS schools, 4th, 5th, and 6th grade students in eMINTS classrooms scored higher than their counterparts in non-eMINTS classrooms. Fourth graders scored more than four points higher on average, reaching a level of statistical significance.

Table 2. Language Arts UPASS Scaled Score Results for eMINTS and non-eMINTS Classrooms 05

	N	eMINTS Classrooms Mean	N	non-eMINTS Classrooms Mean	Difference in Means	P-Value	Trend
Grade 4	274	159.36	145	158.40	0.96	0.432	—
Grade 5	36	163.19	108	159.21	3.98	0.059*	—
Grade 6	344	164.26	737	163.54	0.72	0.346	—
Grade 7	301	157.70	756	164.15	-6.45	<0.000*	—
Grade 8	418	158.27	764	164.38	-6.11	<0.000*	—

*Statistically significant

Utah considers student achievement in language arts by the characteristics of ethnicity, limited English proficiency, low income, disability, and special education status. Ethnicity is described by seven categories:

- Asian
- Black
- Caucasian
- Hispanic
- Indian/Native American
- Pacific Islander
- Unknown

Limited English proficiency is described by four categories:

- Monolingual non-English
- Predominantly speaks non-English language
- Bi-lingual
- Predominantly speaks English

Low income, disability, and special education status are categorically coded by participation as defined by the Utah State Office of Education.

Table 3 highlights the positive effects of eMINTS by these socio-economic and academic characteristics. For some characteristics at the grade level the number of cases is very small, introducing potential reliability issues. Thus, it is important to consider Table 3 as primarily descriptive and to limit generalizing from the difference in means.

Limited English proficiency students who are bilingual or speak predominately English, scored higher in eMINTS than non-eMINTS classrooms. Elementary special education students in eMINTS classrooms also scored higher than their non-eMINTS peers.

Table 3. Positive Outcomes for eMINTS 05 Classroom Students by Socio-economic and Academic Status as Indicated by the Language Arts UPASS Scaled Score Means

* Nearing equivalency	Socio-economic and Academic Status	N	eMINTS Classrooms Mean	N	non- eMINTS Classrooms Mean	Difference in Means
Grade 4		274		147		
	Ethnicity:					
	Asian	3	170.33	6	161.33	9.00
	Caucasian	68	163.95	116	161.48	2.47
	Hispanic*	63	155.50	126	155.56	-0.06
	Pacific Islander	6	154.00	11	148.83	5.17
	LEP:					
	Bilingual*	14	164.21	12	163.33	0.88
	Low Income*:	208	157.39	103	157.56	-0.17
	Special Education:	52	156.57	31	148.43	8.14
Grade 5						
	Ethnicity:					
	Caucasian	31	164.68	47	162.60	2.08
	LEP:					
	Predominately English	2	164.50	13	163.23	1.27
	Low Income:	20	162.75	79	156.80	5.95
	Special Education:	2	165.00	19	148.42	16.58
Grade 6						
	LEP:					
	Monolingual	2	144.00	2	134.00	10.00
	Bilingual	10	157.10	25	150.08	7.02
	Predominately English	6	167.00	61	161.16	5.84
	Special Education*:	46	151.80	90	151.41	0.39
Grade 7						
	LEP:					
	Bilingual	27	166.19	54	162.70	3.49
	Predominately English	21	170.33	14	166.50	3.83
Grade 8						
	Ethnicity:					
	Hispanic*	261	157.07	269	157.96	-0.89
	LEP:					
	Language	108	153.84	44	149.02	4.82
	Bilingual	41	159.05	21	153.86	5.19
	Predominately English	34	163.55	54	162.74	0.81

Math

Utah students in grades 1 through 11 complete the UPASS CRT math test each year. This section considers outcomes for students in grades 4 through 6 on the UPASS CRT math tests, comparing school years 04 and 05 as well as eMINTS to non-eMINTS classroom and school participation. Student outcomes are further disaggregated by achievement and socio-economic characteristics including: ethnicity, limited English status, low income, disability, and special education status. Table 4 illustrates the direction of change by grade for students in eMINTS classrooms in years 04 and 05. Table 5 compares students in eMINTS classrooms and non-eMINTS classrooms in schools where the eMINTS program has been implemented. Table 6 characterizes 05 student outcomes by achievement and socio-economic status that appear to benefit from participation in eMINTS classrooms.

On average, students in 05 eMINTS classrooms scored higher or near equivalency of students in 04 eMINTS classrooms on the Math UPASS CRT test. In grades 4 and 6, scores remained relatively flat, varying in range by less than one on the scaled score mean. Fifth grade students in 05, however, scored more than three points higher on average than their 04 peers.

Table 4. Math UPASS Scaled Score Results for eMINTS Schools 04-05

	N	04 Mean	N	05 Mean	Change	Trend
Grade 4	301	161.04	273	161.22	0.18	—
Grade 5	61	158.64	36	161.97	3.33	—
Grade 6	275	162.45	345	161.75	-0.70	—

On average in eMINTS schools, 4th, 5th, and 6th grade students in eMINTS classrooms scored higher than their counterparts in non-eMINTS classrooms. Fourth graders scored more than four points higher on average, reaching a level of statistical significance.

Table 5. Math UPASS Scaled Score Results for eMINTS and non-eMINTS Classrooms 05

	N	eMINTS Classrooms Mean	N	non-eMINTS Classrooms Mean	Difference in Means	P-Value	Trend
Grade 4	273	161.22	145	157.02	4.20	<0.000	—
Grade 5	36	161.97	107	159.49	2.48	0.252	—
Grade 6	345	161.75	737	160.87	0.88	0.247	—

Utah considers student achievement in math by the characteristics of ethnicity, limited English proficiency, low income, and special education status. Ethnicity is described by seven categories:

- Asian
- Black
- Caucasian

- Hispanic
- Indian/Native American
- Pacific Islander
- Unknown

Limited English proficiency is described by four categories:

- Monolingual non-English
- Predominantly speaks non-English language
- Bi-lingual
- Predominantly speaks English

Low income and special education status are categorically coded by participation as defined by the Utah State Office of Education.

Low income children in eMINTS classrooms scored higher than low income children in non-eMINTS classrooms in grades 4, 5, and 6. As with Language Arts, participation in an eMINTS classroom appears to benefit students with limited English proficiency. Fourth, 5th and 6th grade special education eMINTS students scored consistently higher on average than non-eMINTS students.

Table 6. Positive Outcomes for eMINTS 05 Classroom Students by Socio-economic and Academic Status as Indicated by the Math UPASS Scaled Score Means

	Socio-economic and Academic Status	N	eMINTS Classrooms Mean	N	non-eMINTS Classrooms Mean	Difference in Means
Grade 4		273		145		
	Ethnicity:					
	Asian*	6	172.50	3	171.00	1.50
	Caucasian	115	163.53	68	158.85	4.68
	Hispanic*	127	159.78	61	155.56	4.22
	Indian/NA*	5	162.20	5	161.40	0.80
	Pacific Islander	11	156.45	6	142.50	13.95
	LEP:					
	Predominately Own Language	61	157.10	38	153.18	3.92
	Bilingual*	13	164.23	12	162.42	1.81
	English*	5	170.40	2	164.50	0.90
	Low Income:	191	160.87	89	156.62	4.25
	Special Education:	52	156.57	31	148.43	8.14
Grade 5						
	Ethnicity:					
	Caucasian*	31	163.03	47	161.83	1.20
	LEP:					
	Predominately Own Language	2	157.00	14	152.71	4.29
	Low Income:	20	161.20	78	156.90	4.30
	Special Education:	2	158.00	19	149.53	8.47
Grade 6						
	Ethnicity:					
	Asian	2	168.00	12	165.19	2.81
	LEP:					
	Bilingual	10	156.80	25	148.60	8.20
	Predominately English	6	160.83	61	158.10	2.73
	Low Income*:	199	159.59	487	157.91	1.68

* Nearing equivalency

Science

Utah students in grades 4 through 8 complete the UPASS CRT science test each year. This section considers outcomes for students in grades* 5 and 6 on the UPASS CRT math tests, comparing school years 04 and 05 as well as eMINTS to non-eMINTS classroom and school participation. Student outcomes are further disaggregated by achievement and socio-economic characteristics including: ethnicity, limited English status, low income, disability, and special education status. Table 6 illustrates the direction of change by grade for students in eMINTS classrooms in years 04 and 05. Table 7 compares students in eMINTS classrooms and non-eMINTS classrooms in schools where the eMINTS program has been implemented. Table 8 characterizes 05 student outcomes by achievement and socio-economic status that appear to benefit from participation in eMINTS classrooms.

Both 5th and 6th grade eMINTS students scored higher on the 05 Science UPASS test than the 04 test.

Table 6. Science UPASS Scaled Score Results for eMINTS Classrooms 04-05

	04 Mean	05 Mean	Change	Trend
Grade 5	156.16	157.81	1.65	—
Grade 6	159.31	160.46	1.15	—

Students in 05 eMINTS 5th grade classrooms scored nearly four points higher on the Science UPASS test than their non-eMINTS counterparts. Additionally, 05 students in grade 6 scored nearly two points higher than non-eMINTS students.

Table 7. Science UPASS Scaled Score Results for eMINTS and non-eMINTS Classrooms 05

	eMINTS Classrooms Mean	non-eMINTS Classrooms Mean	Difference in Means	P-Value	Trend
Grade 5	157.81	154.00	3.81	0.073	—
Grade 6	160.46	158.53	1.93	0.019*	—

*Statistically significant

Utah considers student achievement in math by the characteristics of ethnicity, limited English proficiency, low income, and special education status. Ethnicity is described by seven categories:

- Asian
- Black
- Caucasian
- Hispanic

* The N for 4th eMINTS classroom students completing the UPASS CRT Science test was 63, an insufficient size for reliable comparisons. However, validated Proficiency Level and scaled score mean outcomes for these students are reported in the comprehensive final report appendices.

- Indian/Native American
- Pacific Islander
- Unknown

Limited English proficiency is described by four categories:

- Monolingual non-English
- Predominantly speaks non-English language
- Bi-lingual
- Predominantly speaks English

Low income and special education status are categorically coded by participation as defined by the Utah State Office of Education.

As with language arts and math, participation in an eMINTS classroom appears to provide a positive effect for children from low income households and well as students receiving special education services.

Table 8. Positive Outcomes for eMINTS 05 Classroom Students by Socio-economic and Academic Status as Indicated by the Science UPASS Scaled Score Means

	Socio-economic and Academic Status	N	eMINTS Classrooms Mean	N	non-eMINTS Classrooms Mean	Difference in Means
Grade 5		36		108		
	Ethnicity:					
	Caucasian	31	159.81	47	157.53	2.28
	LEP:					
	Predominately English	2	157.00	13	154.92	2.08
	Low Income:	20	156.90	79	151.78	5.12
	Special Education:	2	168.00	19	146.11	21.89
Grade 6		344		687		
	Ethnicity:					
	Asian	2	160.00	12	158.25	1.75
	Hispanic*	27	153.44	266	152.71	0.73
	LEP:					
	Monolingual	2	145.50	3	133.67	11.83
	Bilingual	10	154.70	21	143.52	11.18
	Predominately English*	6	157.50	60	156.67	0.83
	Low Income*:	199	158.14	450	154.80	3.34

* Nearing equivalency

While these results are not comprehensive, they do indicate through testing outcomes that eMINTS participation is generally beneficial to students and specifically beneficial to students with one or more socio-economic or academic characteristic that places them at high risk for academic underachievement.

The forthcoming final report will explore student outcomes by the selected characteristics in more depth as well as synthesize the eMINTS classroom observation data. Specifically, the report will explore the link between lesson type and classroom climate including the relationship between those indicators and UPASS CRT test outcomes as appropriate.